**IN THE UNITED STATES
PATENT AND TRADEMARK OFFICE**

Patent Application

Appellant (s):	**Mark Dilman et al.**		
Serial No.:	**09/813,415**		
Examiner:	**Bilgrami, Asghar H.**		
Filed:	**March 21, 2001**	Group Art Unit:	**2143**
Confirmation #:	**2405**	Case:	**1-6**
Title:	**METHOD AND APPARATUS FOR EFFICIENT REACTIVE MONITORING**		

**MAIL STOP APPEAL BRIEF-PATENTS
COMMISSIONER FOR PATENTS
P.O. BOX 1450
ALEXANDRIA, VA 22313-1450**

SIR:

APPEAL BRIEF

Appellants submit this Appeal Brief to the Board of Patent Appeals and Interferences on appeal from the decision of the Examiner of Group Art Unit 2154 mailed July 17, 2007 finally rejecting claims 1, 6-12 and 14.

In the event that an extension of time is required for this appeal brief to be considered timely, and a petition therefor does not otherwise accompany this appeal brief, any necessary extension of time is hereby petitioned for.

The Commissioner is authorized to charge the Appeal Brief fee ($510) and any other fees due to make this filing timely and complete (including extension of time fees) to Deposit Account No. 20-0782/LCNT/DILMAN1.

Table of Contents

Real Party in Interest

The real party in interest is LUCENT TECHNOLOGIES INC.

Related Appeals and Interferences

Appellants assert that no appeals or interferences are known to Appellants, Appellants' legal representative, or assignee which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

Status of Claims

Claims 1, 6-12 and 14 are pending in the application. Claims 1-12 were originally presented in the application. Claims 13 and 14 were added by amendment. Claims 2-5 and 13 were cancelled. Claims 1, 6-12 and 14 were amended. Claims 1, 6-12 and 14 stand finally rejected as discussed below. The final rejection of claims 1, 6-12 and 14 is appealed.

Status of Amendments

All claim amendments have been entered.

Summary of Claimed Subject Matter

Embodiments of the present invention are generally directed to monitoring of network elements by a management station. More specifically, the present invention includes embodiments providing techniques enabling a management station to manage network elements in a manner that significantly reduces the amount of monitoring related traffic transmitted between the network elements and the management station. The present invention reduces the monitoring related traffic by using a combination of aperiodic polling and asynchronous event reporting.

For the convenience of the Board of Patent Appeals and Interferences, Appellants' independent claims 1, 7, 8, 9, and 10 are presented below with citations to various figures and appropriate citations to at least one portion of the specification for elements of the appealed claims.

Claim 1 positively recites (with reference numerals, where applicable and cites to at least one portion of the specification added):

1. (previously presented) A method for monitoring usage of resources allocated to a plurality of nodes (130-132, 150-152) of a network (100), comprising the steps of:

assigning a parameter to each of a plurality of nodes of the network, wherein each parameter is indicative of a rate of change of usage of said resources of the node; (Pg. 6, Lines 8 – 16; Pg. 7, Lines 21-25)

locally monitoring (403), at each of the nodes, the rate of change of the usage of said resources of the node; (Pg. 9, Lines 10-15)

reporting (405) to a centralized management station (160) of the network when the rate of change of the usage of the resources of one of the nodes exceeds a first threshold; (Pg. 9, Lines 10-15)

initiating (505, 507) a poll of resources of nodes of the network by the centralized management station in response to reporting from the node or a time interval being exceeded; (Pg. 9, Lines 18-20, Lines 27-30)

determining (509) whether a sum of the currently reported rates of change of

usage of node resources, received in response to the poll initiated by the management station (160), exceeds a second threshold; and (Pg. 9, Lines 21-22)

generating (509, 513) an alarm if the sum of the currently reported rates of change of usage of node resources exceeds the second threshold, else updating (511) the time interval. (Pg. 9, Lines 22-26)

Claim 7 positively recites (with reference numerals, where applicable and cites to at least one portion of the specification added):

7. (previously presented) A method for monitoring usage of a resource in nodes (130-132, 150-152) of a network (100), comprising the steps of:

(a) monitoring (403) usage of the resource in a node to determine when a rate of change of the usage exceeds a first predetermined threshold; (Pg. 9, Lines 10-15)

(b) reporting (405) to a management station of the network when the rate of change of the usage exceeds said first predetermined threshold; and (Pg. 9, Lines 10-15)

(c) initiating (505, 507) a poll of resources in the nodes of the network by the management station in response to reporting from the node or a time interval being exceeded. (Pg. 9, Lines 18-20, Lines 27-30)

Claim 8 positively recites (with reference numerals, where applicable and cites to at least one portion of the specification added):

8. (previously presented) A method for monitoring usage of resources in nodes (130-132, 150-152) of a network (100), comprising the steps of:

asynchronous reporting (405) of an event to a management station of the network when a rate of change of a usage of at least one resource of said resources in any of said nodes deviates from a prescribed norm; and (Pg. 9, Lines 10-15)

periodic polling (505, 507) of said nodes in accordance with a polling interval, and aperiodic polling (505, 507) of said nodes in response to reporting of said event, wherein a tunable parameter is adjusted in response to the usage. (Pg. 9, Lines 18-20, Lines 27-30)

Claim 9 positively recites (with reference numerals, where applicable and cites to at least one portion of the specification added):

9. (previously presented) A method for managing a global resource of a network (100) in order to reduce the amount of monitoring related traffic, comprising the steps of:

assigning (703) a local threshold to each of a plurality of node resources of a respective plurality of nodes of the network; (Pg. 6, Lines 8 – 16; Pg. 7, Lines 21-25)

reporting (703, 705) to a management station (160) of the network when a value indicative of node resource usage exceeds the assigned local threshold as determined using local monitoring of the node resource; (Pg. 10, Line 27 – Pg. 11, Line 7)

initiating (805, 807) a poll, by the management station (160), of node resource usage by the nodes of the network in response to a determination that a sum of previously reported values indicative of node resource usage received from reporting nodes plus an upper bound of node resource usage for non-reporting nodes exceeds a threshold; and (Pg. 11, Lines 8 – 21)

generating (809, 811) an alarm if the sum of the currently reported values indicative of node resource usage, received in response to the poll initiated by the management station, exceeds the threshold. (Pg. 11, Lines 19-21)

Claim 10 positively recites (with reference numerals, where applicable and cites to at least one portion of the specification added):

10. (previously presented) A method for managing a global resource of a network (100) in order to reduce the amount of monitoring related traffic, comprising the steps of:

assigning a local threshold to each of a plurality of node resources of a respective plurality of nodes (130-132, 150-152) of the network (100); (Pg. 6, Lines 8 – 16; Pg. 7, Lines 21-25)

reporting (609, 611) to a management station (160) of the network when a rate of change of usage of said node resource exceeds the local threshold as determined using

local monitoring of the node resource, wherein said rate of change of usage of said node resource is determined using a variable time interval comprising a difference between a current time and a time at which the node was last polled by the management station; (Pg. 10, Lines 3-26)

initiating (505, 507) a poll, by the management station (160), of the node resource usage of the nodes of the network in response to receiving reporting from one of the nodes or a time interval being exceeded; (Pg. 9, Lines 18-20, Lines 27-30)

determining (509) whether a sum of the currently reported rates of change of usage of node resources, received in response to the poll initiated by the management station, exceeds a threshold; and (Pg. 9, Lines 21-22)

generating (509, 513) an alarm if the sum of the currently reported rates of change of usage of node resources exceeds the threshold. (Pg. 9, Lines 22-26)

Grounds of Rejection to be Reviewed on Appeal

The Examiner has rejected claims 1, 6, 9 and 10 under 35 U.S.C. §103(a) as being unpatentable over Boukobza et al. (U.S. Patent No. 6,122,664, hereinafter "Boukobza) and Robinson et al. (U.S. Patent 6,570,867, hereinafter "Robinson").

Claims 7, 8, 11, 12 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mandal et al. (U.S. Patent No. 6,170,009, hereinafter "Mandal") and Robinson.

Arguments

35 U.S.C. §103

The Examiner has rejected claims 1, 6, 9 and 10 under 35 U.S.C. §103(a) as being unpatentable over Boukobza and Robinson. Appellants respectfully traverse the rejection.

Claim 1

According to MPEP §2143, to establish a prima facie case of obviousness under §103, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

The Office Action failed to establish a *prima facie* case of obviousness, because the combination of Boukobza and Robinson fails to teach or suggest all the claim limitations. Namely, the combination of Boukobza and Robinson fails to teach or suggest at least the features of monitoring the rate of change of usage of resources at one or more nodes and reporting to a centralized management station of the network when the rate of change of the usage of the resources of one of the nodes exceeds a threshold, as claimed in Appellants' claim 1.

Boukobza discloses a process for monitoring a plurality of object types of a plurality of nodes including a management node in an information system. As disclosed in Boukobza, monitoring is configured and then distributed in a filtered way from the management node to autonomous agents installed in each of the nodes to be monitored in order either to locally process the different object types or all of the objects of a domain called a global object, or to feed back information to be displayed in a graphical interface

of the management node. Boukobza further discloses that each agent includes a plurality of modules specific to the different object types or to a particular domain, and that each module measures static and dynamic parameters particular to the object type it monitors and collects the measurements. (Boukobza, Abstract).

Boukobza, however, fails to teach or suggest at least the features of monitoring a rate of change of usage of resources at one or more nodes and reporting to a centralized management station of the network when the rate of change of the usage of the resources of one of the nodes exceeds a threshold, as claimed in Appellants' claim 1. Rather, although Boukobza states that a module on a node that is being monitored measures both static and dynamic parameters particular to an object that the module monitors, Boukobza fails to teach or suggest monitoring a rate of change of usage of a resource, as claimed in Appellants' claim 1. A generic statement that a node being monitored measures dynamic parameters, as taught in Boukobza, does not teach or suggest monitoring a rate of change, much less a rate of change of the usage of the resources of a node, as claimed in Appellants' claim 1.

In the Office Actions, the Examiner cited specific portions of Boukobza (namely, Col. 1, Lines 33-35 and Col. 2, Lines 21-55), asserting that the cited portions of Boukobza disclose Appellants' limitations of "assigning a parameter to each of a plurality of nodes of the network, wherein each parameter is indicative of a rate of change of usage of said resources of the node," "locally monitoring, at each of the nodes, the rate of change of the usage of said resources of the node," and "reporting to a centralized management station of the network when the rate of change of the usage of the resources of one of the nodes exceeds a first threshold," as claimed in Appellants' claim 1. (Final Office Action, Pg. 2).

The cited portions of Boukobza, however, fail to teach or suggest any parameter indicative of a rate of change of usage of a resource or monitoring a rate of change of usage of a resource. Rather, the cited portions of Boukobza merely describe generic parameters that may be measured or tested relative to predefined thresholds. The cited portions of Boukobza do not teach or suggest monitoring a rate of change of usage of a resource.

Thus, since Boukobza fails to teach or suggest a rate of change of usage of a resource, Boukobza must fail to teach or suggest at least the limitations of "assigning a parameter to each of a plurality of nodes of the network, wherein each parameter is indicative of a rate of change of usage of said resources of the node," "locally monitoring, at each of the nodes, the rate of change of the usage of said resources of the node," and "reporting to a centralized management station of the network when the rate of change of the usage of the resources of one of the nodes exceeds a first threshold," as claimed in Appellants' claim 1.

Furthermore, Robinson fails to bridge the substantial gap between Boukobza and Appellants' claim 1.

In general, Robinson discloses a network management framework for monitoring network-level concepts of routes and paths. As disclosed in Robinson, a route and path management system includes a data collector for collecting data from individual network elements, a management server for processing the collected data into manageable route and path objects, and a graphical user interface for allowing a user to manage and monitor routes and paths. (Robinson, Abstract).

Robinson, however, fails to teach or suggest at least the features of monitoring the rate of change of usage of resources at one or more nodes and reporting to a centralized management station of the network when the rate of change of the usage of the resources of one of the nodes exceeds a threshold.

Rather, Robinson merely describes a polling rate, which, as stated in Robinson, is a rate at which network elements are polled by a management system. (Robinson, Col. 7, Lines 20-25). A polling rate at which network elements are polled by a management system, as taught in Robinson, is not a rate of change of usage of a resource at a node, as claimed in Appellants' claim 1.

Thus, since Robinson fails to teach or suggest a rate of change of usage of a resource, Robinson must fail to teach or suggest at least the limitations of "assigning a parameter to each of a plurality of nodes of the network, wherein each parameter is indicative of a rate of change of usage of said resources of the node," "locally monitoring, at each of the nodes, the rate of change of the usage of said resources of the node," and "reporting to a centralized management station of the network when the rate

of change of the usage of the resources of one of the nodes exceeds a first threshold," as claimed in Appellants' claim 1.

Thus, since Boukobza and Robinson each fails to teach or suggest a rate of change of usage of a resource, any permissible combination of Boukobza and Robinson must fail to teach or suggest a rate of change of usage of a resource and, therefore, any permissible combination of Boukobza and Robinson must fail to teach or suggest at least the limitations of "assigning a parameter to each of a plurality of nodes of the network, wherein each parameter is indicative of a rate of change of usage of said resources of the node," "locally monitoring, at each of the nodes, the rate of change of the usage of said resources of the node," and "reporting to a centralized management station of the network when the rate of change of the usage of the resources of one of the nodes exceeds a first threshold," as claimed in Appellants' claim 1.

Furthermore, since Boukobza and Robinson each fail to teach or suggest monitoring a rate of change of usage of a resource, Boukobza and Robinson must each also fail to teach or suggest other limitations of Appellants' claim 1 associated with a rate of change of usage of a resource. Specifically, Boukobza and Robinson must also fail to teach or suggest each of the limitations of "determining whether a sum of the currently reported rates of change of usage of node resources, received in response to the poll initiated by the management station, exceeds a second threshold" and "generating an alarm if the sum of the currently reported rates of change of usage of node resources exceeds the second threshold, else updating the time interval," as claimed in Appellants' claim 1.

Thus, Boukobza and Robinson, alone or in combination, fail to teach or suggest Appellants' claim 1, as a whole. Therefore, independent claim 1 is patentable over Boukobza and Robinson and, thus, fully satisfies the requirements of 35 U.S.C. §103 and is patentable thereunder. Furthermore, claim 6 depends directly from independent claim 1 and recites additional limitations therefor. Therefore, dependent claim 6 also is not obvious over Boukobza in view of Robinson, and, thus, fully satisfies the requirements of 35 U.S.C. §103 and is patentable thereunder.

Accordingly, Appellants respectfully request that the rejection be withdrawn.

Claim 9

As described herein, Boukobza discloses a process for monitoring a plurality of object types of a plurality of nodes including a management node in an information system and Robinson discloses a network management framework for monitoring network-level concepts of routes and paths.

Boukobza and Robinson, however, alone or in combination, fail to teach or suggest Appellants' claim 9, as a whole. Namely, Boukobza and Robinson, alone or in combination, fail to teach or suggest at least the limitation of "initiating a poll, by the management station, of node resource usage by the nodes of the network in response to a determination that a sum of previously reported values indicative of node resource usage received from reporting nodes plus an upper bound of node resource usage for non-reporting nodes exceeds a threshold," as claimed in Appellants' claim 9. Thus, Boukobza and Robinson, alone or in combination, fail to teach or suggest Appellants' claim 9, as a whole.

Furthermore, Appellants note that, according to MPEP §2142, "[t]he examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. If the examiner does not produce a *prima facie* case, the applicant is under no obligation to submit evidence of nonobviousness."

In the Final Office Action dated July 17, 2007, the Examiner failed to produce a prima facie case of obviousness of Appellants' claim 9. Specifically, the Examiner failed to provide any arguments or evidence addressing Appellants' claim 9 limitation of "initiating a poll, by the management station, of node resource usage by the nodes of the network in response to a determination that a sum of previously reported values indicative of node resource usage received from reporting nodes plus an upper bound of node resource usage for non-reporting nodes exceeds a threshold." The Examiner did not address this limitation anywhere in the Final Office Action. Rather, the Examiner merely refers to the limitations of Appellants' claim 1 in applying a rejection of Appellants' claims 1 and 9, without regard for the differences between Appellants' claim 1 and claim 9. Accordingly, Appellants respectfully submit that the Examiner failed to produce a prima facie case of obviousness of Appellants' claim 9 in the Final Office Action.

Appellants note that the Examiner did address this limitation in an earlier Office Action (the Office Action dated February 8, 2007). In that Office Action, the Examiner noted that Mandal failed to teach or suggest this limitation of Appellants' claim 9. The Examiner then cited Robinson, asserting that Robinson discloses this limitation. In Appellants' response dated May 2, 2007 to the Office Action dated February 8, 2007, Appellants noted that Robinson was devoid of any teaching or suggestion of the limitation of "initiating a poll, by the management station, of node resource usage by the nodes of the network in response to a determination that a sum of previously reported values indicative of node resource usage received from reporting nodes plus an upper bound of node resource usage for non-reporting nodes exceeds a threshold," as claimed in Appellants' claim 9.

In general, Robinson describes the use of polling to perform path discovery, and polling network objects in an object queue to obtain performance data. Specifically, Robinson describes "polling each network object listed in the object queue 68 (new and old) through the data collector 21 to obtain performance data for each of the objects listed. The object performance logic 69 then forwards the polled responses obtained to the notification channel for notification to the GUI 23." (Robinson, Col. 12, Lines 20-23). Robinson, however, fails to teach or suggest at least the limitation of "initiating a poll, by the management station, of node resource usage by the nodes of the network in response to a determination that a sum of previously reported values indicative of node resource usage received from reporting nodes plus an upper bound of node resource usage for non-reporting nodes exceeds a threshold," as claimed in Appellants' claim 9.

In the Office Action dated February 8, 2007, the Examiner cites specific portions of Robinson (Col. 2, Lines 60-67; Col. 3, Lines 1-33; Col. 5, Lines 3-12; Col. 12, Lines 26-44; and Col. 13, Lines 46-58), asserting that the cited portions of Robinson teach Appellants' limitation of "initiating a poll, by the management station, of node resource usage by the nodes of the network in response to a determination that a sum of previously reported budget values received from reporting nodes plus an upper bound of budget values for non-reporting nodes exceeds a threshold," as claimed in Appellants' claim 9. The cited portions of Robinson, however, fail to teach or suggest this limitation, or Appellants' amended limitation of "initiating a poll, by the management station, of node

resource usage by the nodes of the network in response to a determination that a sum of previously reported values indicative of node resource usage received from reporting nodes plus an upper bound of node resource usage for non-reporting nodes exceeds a threshold," as claimed in Appellants' claim 9.

Rather, the cited portions of Robinson merely disclose various other teachings. With respect to the portions of Robinson cited by the Examiner, Col. 2, Lines 60-67 of Robinson merely includes general statements indicating that routes and paths in a network provide managers with capabilities including troubleshooting, performance monitoring service level planning, and path provisioning. Similarly, for example, Col. 3, Lines 1-33 of Robinson merely includes general statements describing the advantages of using a data collector for collecting routing information from individual network devices versus device level management applications. Furthermore, Col. 3, Lines 1-33 of Robinson describes functions supported by the system of Robinson, such as real-time monitoring and reporting of device-level performance, storing and providing route history and path-level performance history, and raising and clearing of QoS alarms. Moreover, Col. 5, Lines 3-12 of Robinson merely includes general statements regarding the configuration of an IP network.

In other words, these portions of Robinson described above are completely devoid of any teaching or suggestion of initiating a poll of node resource usage by the nodes of the network in response to a determination that a sum of previously reported values indicative of node resource usage received from reporting nodes plus an upper bound of node resource usage for non-reporting nodes exceeds a threshold, as claimed in Appellants' claim 9. These portions of Robinson are devoid of any teaching or suggestion of any sums, previously reported values, values indicative of node resource usage, upper bounds, reporting and non-reporting nodes, or any of the other features of Appellants' limitation.

Furthermore, with respect to other portions of Robinson cited by the Examiner, Col. 12, Lines 26-44 and Col. 13, Lines 46-58, Robinson merely describes simple calculations and comparisons that are completely devoid of any teaching or suggestion of previously reported values indicative of node resource usage received from reporting nodes, an upper bound of node resource usage for non-reporting nodes, a sum of

previously reported values indicative of node resource usage received from reporting nodes and an upper bound of node resource usage for non-reporting nodes, or a determination that such a sum exceeds a threshold.

More specifically, with respect to Col. 12, Lines 26-44, Robinson states that objects polled are compared to threshold data contained in a path queue and performance of each path listed therein is calculated. The comparison of polled objects to threshold data and calculation of path performance, as taught in Robinson, simply does not teach or suggest the sum claimed in Appellants' claim 9. Furthermore, in the cited section of Robinson, Robinson describes forwarding of paths for which performance was calculated to route performance logic, which compares the obtained paths with old identification data in the route queue. The comparison of paths with information in a path queue, as taught in Robinson, simply does not teach or suggest the sum claimed in Appellants' claim 9. As such, the cited portion of Robinson clearly fails to teach or suggest at least the limitation of "initiating a poll, by the management station, of node resource usage by the nodes of the network in response to a determination that a sum of previously reported values indicative of node resource usage received from reporting nodes plus an upper bound of node resource usage for non-reporting nodes exceeds a threshold," as claimed in Appellants' claim 9.

Furthermore, with respect to Col. 13, Lines 46-58, Robinson states that performance of a specified route, and each of the associated paths and objects, is measured against appropriate performance thresholds located in the threshold crossing logic. The performance of a route, path, or object, as taught in Robinson, simply does not teach or suggest the sum claimed in Appellants' claim 9. Furthermore, in the cited section of Robinson, Robinson further states that once threshold calculations are completed, the historical performance monitoring process is repeated to obtain new performance values which are permanently stored and checked against threshold levels. In other words, Robinson merely includes general statements about threshold calculations, historical performance monitoring, and comparison of performance values against thresholds. Such general statements of Robinson simply do not teach or suggest the sum claimed in Appellants' claim 9. As such, the cited portion of Robinson clearly fails to teach or suggest at least the limitation of "initiating a poll, by the management

station, of node resource usage by the nodes of the network in response to a determination that a sum of previously reported values indicative of node resource usage received from reporting nodes plus an upper bound of node resource usage for non-reporting nodes exceeds a threshold," as claimed in Appellants' claim 9.

Thus, since Boukobza and Robinson each fail to teach or suggest "initiating a poll, by the management station, of node resource usage by the nodes of the network in response to a determination that a sum of previously reported values indicative of node resource usage received from reporting nodes plus an upper bound of node resource usage for non-reporting nodes exceeds a threshold," any permissible combination of Boukobza and Robinson must also fail to teach or suggest "initiating a poll, by the management station, of node resource usage by the nodes of the network in response to a determination that a sum of previously reported values indicative of node resource usage received from reporting nodes plus an upper bound of node resource usage for non-reporting nodes exceeds a threshold." Thus, Boukobza and Robinson, alone or in combination, fail to teach or suggest Appellants' claim 9, as a whole.

As such, independent claim 9 fully satisfies the requirements of 35 U.S.C. §103 and is patentable over Boukobza and Robinson. Accordingly, Appellants respectfully request that the rejection be withdrawn.

Claim 10

As described herein, Boukobza discloses a process for monitoring a plurality of object types of a plurality of nodes including a management node in an information system and Robinson discloses a network management framework for monitoring network-level concepts of routes and paths.

As further described herein, with respect to claim 1, Boukobza and Robinson, alone or in combination, fail to teach or suggest a rate of change of usage of a resource.

Thus, for at least the reasons described herein with respect to claim 1, Appellants respectfully submit that Boukobza and Robinson, alone or in combination, fail to teach or suggest at least the limitation of "reporting to a management station of the network when a rate of change of usage of said node resource exceeds the local threshold as determined using local monitoring of the node resource," as claimed in Appellants' claim 10.

Additionally, Appellants respectfully submit that Boukobza and Robinson, alone or in combination, also fail to teach or suggest a variable time interval comprising a difference between a current time and a time at which the node was last polled by the management station. Thus, Boukobza and Robinson, alone or in combination, must also fail to teach or suggest at least the limitation that "said rate of change of usage of said node resource is determined using a variable time interval comprising a difference between a current time and a time at which the node was last polled by the management station," as claimed in Appellants' claim 10.

Furthermore, Appellants note that, similar to claim 9, in the Final Office Action dated July 17, 2007, the Examiner has failed to provide any arguments or evidence addressing Appellants' claim 10 limitation of "wherein said rate of change of usage of said node resource is determined using a variable time interval comprising a difference between a current time and a time at which the node was last polled by the management station." The Examiner simply does not address this limitation anywhere in the Office Action. Rather, the Examiner merely refers to the limitations of Appellants' claim 1 in applying a rejection of Appellants' claims 1 and 10, without regard for the differences between Appellants' claim 1 and claim 10. Accordingly, Appellants respectfully submit that the Examiner has failed to produce a prima facie case of obviousness of Appellants' claim 10.

As such, independent claim 10 fully satisfies the requirements of 35 U.S.C. §103 and is patentable over Boukobza and Robinson. Accordingly, Appellants respectfully request that the rejection be withdrawn.

Claims 7, 8, 11, 12 and 14

Claims 7, 8, 11, 12 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mandal and Robinson. Appellants respectfully traverse the rejection.

Claims 7 and 14

Claim 7 recites the features of monitoring the rate of change of usage of resources at one or more nodes and reporting to a centralized management station of the network when the rate of change of the usage of the resources of one of the nodes exceeds a

threshold.

Mandal and Robinson, however, alone or in combination, fail to teach or suggest at least these limitations of Appellants' claim 7.

In general, Mandal teaches control of devices on a network using policies. Specifically, Mandal discloses a system that allows an operator to specify a policy for controlling a group of devices. (Mandal, Abstract).

In general, Robinson discloses a network management framework for monitoring network-level concepts of routes and paths. As disclosed in Robinson, a route and path management system includes a data collector for collecting data from individual network elements, a management server for processing the collected data into manageable route and path objects, and a graphical user interface for allowing a user to manage and monitor routes and paths. (Robinson, Abstract).

Mandal and Robinson, however, alone or in combination, fail to teach or suggest at least the features of monitoring the rate of change of usage of resources at one or more nodes and reporting to a centralized management station of the network when the rate of change of the usage of the resources of one of the nodes exceeds a threshold.

In the Final Office Action, the Examiner asserts that "Mandal describes a policy in which a network management system should allow no more than 30% (i.e., a threshold) of total bandwidth for video traffic transmission which depends on time. On col. 7, lines 29-67 Mandal describes the implementation of policies to control the flow of packets (i.e., traffic) with respect to time across the network. Therefore in order to implement such policy it has to monitor at periodic times (col. 6, lines 1-27) the rate of change of a parameter against a certain threshold." (Final Office Action, Pg. 7). Appellants respectfully disagree.

Appellants respectfully maintain that Mandal does not teach a rate of change of usage of a resource. Rather, Mandal teaches a policy in which a value of a resource is compared against a threshold. As taught in Mandal, the resource that is monitored is the percentage of available bandwidth that is used for video traffic. Mandal does not teach a policy in which a rate of change of the resource (rate of change of the percentage of video traffic) is compared to a threshold; rather, Mandal teaches a policy in which the current value of the resource (percentage of the video traffic) is compared to a threshold. As

such, a value of the usage of a resource, as taught in Mandal, is not a rate of change of usage of a resource, as claimed in Appellants' claim 10.

Appellants note that differences between Mandal and Appellants' claim 7 may be better understood with respect to an example. As taught in Mandal, the current value of the percentage of video traffic is measured and compared to a threshold. For example, assume that a current value of the percentage of video traffic is measured to be 25%, and that this measured value is compared to a threshold (e.g., 30%). This measurement of a value of the current percentage of video traffic simply does not teach or suggest a rate at which the percentage of video traffic changes. For example, assume that over the last 10 seconds, the percentage of video traffic has increased from 10% to 40%. This example corresponds to a rate of change of the usage of the resource (e.g., in this example, the percentage of video traffic) of 4% per second. Thus, from this example, it is clear that monitoring a value of usage of a resource, as taught in Mandal, does not teach or suggest monitoring a rate of change of usage of a resource, as claimed in Appellants' claim 7.

In other words, as taught in Mandal, an instantaneous value of the usage of a resource is measured. An instantaneous value of the usage of a resource, as taught in Mandal, is not a rate of change of the usage of a resource, as claimed in Appellants' claim 7. A rate of change is clearly measured using a time interval, or some other interval by which rate of change may be measured. There is no time interval in Mandal. Mandal is devoid of any teaching or suggestion of monitoring any rate of change. As such, since Mandal fails to teach or suggest a rate of change, Mandal must also fail to teach or suggest a rate of change of usage of a resource, as claimed in Appellants' claim 7.

Thus, since Mandal and Robinson each fail to teach or suggest a rate of change of the usage of resources, any permissible combination of Mandal and Robinson must also fail to teach or suggest a rate of change of the usage of resources. Thus, Mandal and Robinson, alone or in combination, fail to teach or suggest Appellants' claim 7, as a whole.

Therefore, independent claim 7 is patentable over Mandal and Robinson and, thus, fully satisfies the requirements of 35 U.S.C. §103 and is patentable thereunder. Furthermore, claim 14 depends from claim 7 and recites additional limitations therefor.

Therefore, dependent claim 7 also is not obvious over Mandal and Robinson, and, thus, fully satisfy the requirements of 35 U.S.C. §103 and is patentable thereunder.

Accordingly, Appellants respectfully request that the rejection be withdrawn.

Claims 8, 11, and 12

Claim 8 recites the feature of "asynchronous reporting of an event to a management station of the network when a rate of change of a usage of at least one resource of said resources in any of said nodes deviates from a prescribed norm."

Mandal and Robinson, however, alone or in combination, fail to teach or suggest those features.

For at least the reasons described herein with respect to claim 7, Mandal and Robinson each fail to teach or suggest a rate of change of the usage of resources, and, thus, any permissible combination of Mandal and Robinson must also fail to teach or suggest a rate of change of the usage of resources. Thus, Mandal and Robinson, alone or in combination, also must fail to teach or suggest asynchronous reporting of an event to a management station of the network when a rate of change of a usage of at least one resource of the resources in any of the nodes deviates from a prescribed norm, as claimed in Appellants' claim 8. As such, Mandal and Robinson fail to teach or suggest Appellants' claim 8, as a whole.

Therefore, independent claim 8 is patentable over Mandal and Robinson and, thus, fully satisfies the requirements of 35 U.S.C. §103 and is patentable thereunder. Furthermore, claims 11 and 12 depend from independent claim 8 and recite additional limitations therefor. Therefore, dependent claims 11 and 12 also are not obvious Mandal and Robinson, and, thus, fully satisfy the requirements of 35 U.S.C. §103 and are patentable thereunder.

Accordingly, Appellants respectfully request that the rejection be withdrawn.

Conclusion

Thus, Appellants submit that all of the claims presently in the application are allowable under the provisions of 35 U.S.C. 103.

For the reasons advanced above, Appellants respectfully urge that the rejections of claims 1, 6-12 and 14 are improper. Reversal of the rejections of the Final Office Action is respectfully requested.

Respectfully submitted,

Dated: 12/17/07

Eamon J. Wall
Registration No. 39,414
Patterson & Sheridan, L.L.P.
595 Shrewsbury Ave. Suite 100
Shrewsbury, NJ 07702
Telephone: (732) 530-9404
Facsimile: (732) 530-9808
Attorney for Appellant

CLAIMS APPENDIX

LISTING OF CLAIMS:

1. (previously presented) A method for monitoring usage of resources allocated to a plurality of nodes of a network, comprising the steps of:

assigning a parameter to each of a plurality of nodes of the network, wherein each parameter is indicative of a rate of change of usage of said resources of the node;

locally monitoring, at each of the nodes, the rate of change of the usage of said resources of the node;

reporting to a centralized management station of the network when the rate of change of the usage of the resources of one of the nodes exceeds a first threshold;

initiating a poll of resources of nodes of the network by the centralized management station in response to reporting from the node or a time interval being exceeded;

determining whether a sum of the currently reported rates of change of usage of node resources, received in response to the poll initiated by the management station, exceeds a second threshold; and

generating an alarm if the sum of the currently reported rates of change of usage of node resources exceeds the second threshold, else updating the time interval.

2-5. (cancelled)

6. (previously presented) The method of claim 1, further including the step of adjusting the usage of the resources at one or more of said nodes.

7. (previously presented) A method for monitoring usage of a resource in nodes of a network, comprising the steps of:

(a) monitoring usage of the resource in a node to determine when a rate of change of the usage exceeds a first predetermined threshold;

(b) reporting to a management station of the network when the rate of change of

the usage exceeds said first predetermined threshold; and

(c) initiating a poll of resources in the nodes of the network by the management station in response to reporting from the node or a time interval being exceeded.

8. (previously presented) A method for monitoring usage of resources in nodes of a network, comprising the steps of:

asynchronous reporting of an event to a management station of the network when a rate of change of a usage of at least one resource of said resources in any of said nodes deviates from a prescribed norm; and

periodic polling of said nodes in accordance with a polling interval, and aperiodic polling of said nodes in response to reporting of said event, wherein a tunable parameter is adjusted in response to the usage.

9. (previously presented) A method for managing a global resource of a network in order to reduce the amount of monitoring related traffic, comprising the steps of:

assigning a local threshold to each of a plurality of node resources of a respective plurality of nodes of the network;

reporting to a management station of the network when a value indicative of node resource usage exceeds the assigned local threshold as determined using local monitoring of the node resource;

initiating a poll, by the management station, of node resource usage by the nodes of the network in response to a determination that a sum of previously reported values indicative of node resource usage received from reporting nodes plus an upper bound of node resource usage for non-reporting nodes exceeds a threshold; and

generating an alarm if the sum of the currently reported values indicative of node resource usage, received in response to the poll initiated by the management station, exceeds the threshold.

10. (previously presented) A method for managing a global resource of a network in order to reduce the amount of monitoring related traffic, comprising the steps

of:

assigning a local threshold to each of a plurality of node resources of a respective plurality of nodes of the network;

reporting to a management station of the network when a rate of change of usage of said node resource exceeds the local threshold as determined using local monitoring of the node resource, wherein said rate of change of usage of said node resource is determined using a variable time interval comprising a difference between a current time and a time at which the node was last polled by the management station;

initiating a poll, by the management station, of the node resource usage of the nodes of the network in response to receiving reporting from one of the nodes or a time interval being exceeded;

determining whether a sum of the currently reported rates of change of usage of node resources, received in response to the poll initiated by the management station, exceeds a threshold; and

generating an alarm if the sum of the currently reported rates of change of usage of node resources exceeds the threshold.

11. (previously presented) The method defined in claim 8 wherein said nodes are selected from the group consisting of routers, switches, bridges, and firewall devices.

12. (previously presented) The method defined in claim 8 wherein said nodes are selected from the group consisting of servers, hosts, and layer 4-7 switches.

13. (cancelled)

14. (previously presented) The method of claim 7, further comprising:

(d) summing all the reported rate of change of the usage of the resources; and

(e) generating an alarm if the sum exceeds a second threshold, else updating the time interval.

EVIDENCE APPENDIX

None

RELATED PROCEEDINGS APPENDIX

None